Part

B

Executive Summary

The Public Service Commission (Commission) has prepared this fourth biennial report for the legislature as required under Wis. Stat. § 196.196(5)(f). This report contains updated information about the use of advanced telecommunications infrastructure for distance learning, the interconnection of libraries, and access to health care. The report also presents information on incumbent and competitive companies' investments in infrastructure and offerings of services such as Integrated Services Digital Network (ISDN) and Digital Subscriber Line (DSL). Maps, located in the appendix, illustrate the status of many infrastructure parameters and provide a visual comparison of the status of infrastructure for 1998 and 2000.

There have been incremental increases in the use of advanced telecommunications for distance learning, the interconnection of libraries, access to health care, and assistance to persons with disabilities. The use of ISDN has also grown modestly. The principal improvements in these areas relate to access to the Internet and the continued growth in the number of libraries with high-speed dedicated access.

Infrastructure investments by the Incumbent Local Exchange Carriers (ILECs) continue to grow at a steady pace. DSL deployment by both the ILECs and Competitive Local Exchange Carriers (CLECs) showed significant gains. Although the number of certified CLECs increased from 50 in 1999 to over 100 in 2000, the number of CLECs actually providing service was under one quarter of those certified. The CLEC's investment in infrastructure has trended downward over the past 18 months amidst mergers and reorganizations.

Although over 100 CLECs in Wisconsin are certified to provide service, under one quarter of those certified were actually providing service to customers at year end 2000.

Cable and wireless companies have maintained a role as viable competitors to the wire line providers, with high-speed connection to the Internet continuing to be a growth driver for these entities.

Distance Learning

The availability of the Technology for Educational Achievement in Wisconsin (TEACH) program and Federal E rate funds provided by the Federal Communications Commission (FCC) has aided the further growth of Wisconsin's distance education networks. The growth includes K-12 school networks, along with full motion video sites in technical colleges and private colleges.

Technology changes have limited growth of the networks that use older, J Series Compressor Decompressors (CODECs) that are no longer manufactured. The Wisconsin Department of Electronic Government (DEG) is investigating the options available for converting to a different video standard.

Access to Health Care

There are ongoing programs that use telecommunications networks for clinical purposes. These include the telemedicine programs of the Veterans Administration (VA), the Marshfield Clinic, and the Wisconsin Department of Corrections (DOC). The Milwaukee VA is using tele-pathology to provide continuing education in microbiology and infectious diseases to medical personnel at the outlying hospitals. In addition, the telemedicine network between Milwaukee and Iron Mountain, Michigan has expanded to include tele-pathology and tele-radiology applications.

Infrastructure Deployment

ILECs have shown a steady increase in the deployment of infrastructure including switching, outside plant, and advanced services. ILECs have deployed broadband services such as DSL service, a potential competitor to ISDN. DSL uses existing copper wires and special equipment to provide a high-speed connection that can be used in place of other higher priced broadband services such as Switched 56. Cost effective and flexible Synchronous Optical NETwork (SONET) facilities that ride on the fiber cable also have shown increased deployment.

CLECs in Wisconsin continue to evolve. Although a large number of CLECs are certified in this state, less than one quarter of those certified actually offered service to customers at year end 2000. The majority of the serving CLECs have their own switching facilities and most offer some type of data service. One of the fastest growing services for landline carriers is high-speed connections to the Internet.

Wireless and cable providers are increasingly competitive in providing customers high-speed access to the Internet. The demand for high-speed connections to the Internet continues to drive growth in infrastructure.

Typically, residential customers in Wisconsin have their homes wired for cable television; this gives the cable companies an advantage in providing broadband services. Industry experts expect cable modems to lead the broadband connections race, with DSL technologies following close behind. Businesses are less likely to be wired for cable; however, cable companies are making inroads to this market sector by providing cabling specifically aimed at access for high-speed data transmission.

Wireless technology is continuing to improve and evolve. The advantage of wireless technology is rapid deployment and configuration, because the cost of buying and installing wires and cables is avoided. Although wireless technology is still facing bandwidth limitations, there are increasing opportunities for wireless in the high-speed access market.

Recommendations and Conclusions

The information that the Commission has gathered indicates that ILECs continue to make steady progress in infrastructure investments. CLECs continue to change dynamically in the present economic environment and these companies offer a variety of technologies to Wisconsin consumers.

Rollout of DSL service by the ILECs and CLECs in the state is used an as indicator of broadband deployment. A company's deployment of broadband type service is an economic, not a technical issue. No one technology is recommended over another. However, broadband deployment will continue to be monitored and included as an infrastructure incentive for companies that choose to establish alternative regulation plans.

To assist in the continued monitoring of service and technology changes, the Commission recommends that companies continue to report information to the Commission through annual reports and data requests, and that CLEC reporting formats be further standardized to provide comparable information. The competitive companies should also be required to file information on service areas and services offered as public information to allow a more complete picture of changes in the infrastructure and the competitive marketplace.

Further, the Commission recommends that statutory authority (see Wis. Stat. § 196.25) be provided to allow the Commission to collect data from cable and wireless providers, so that the legislature and the public have relevant information about all facets of the telecommunications industry. The Commission should also have the ability to directly impose penalties or other consequences on companies that fail to respond to data requests or that file incomplete reports.